

Amendment

3287

We claim:

1. **(Currently Amended)** A method to analyze the condition of a functional fluid comprising:
 - (1) obtaining a sample of the functional fluid,
 - (2) placing the sample of the functional fluid on a test medium wherein the test medium comprises polymeric fibers,
 - (3) reacting the functional fluid with an indicator in the test medium, and
 - (4) analyzing visually the results of the reaction,

resulting in the determination of the condition of the functional fluid; wherein the functional fluid is selected from the group consisting of transmission fluids, hydraulic fluids, transformer fluids, ~~fuels~~, diesel, gasoline, biofuels, and mixtures thereof;

wherein the test medium has a property selected from the group consisting of a porosity, a density, a wicking ability and combinations thereof to provide rapid dispersion on the functional fluid; and;

wherein the indicator is selected from the group consisting of Neutral Red, Safranin T or O, Indigo Carmine, Methylene Blue, Thionin, Thymolindophenol, 2,6-Dichlorophenolindophenol, Galloxyaniline, Nile Blue, Variamine Blue, Diphenyl amine, Diphenylamine-4-sulfonic acid, barium salt, Tris(2,2-dipyridyl)iron (II) sulfate, N-phenylanthranilic acid, Ferroin, Nitroferroin, 5,6-Dimethylferroin, 4-Amino-4'-methyldiphenylamine, Diphenylbenzindinedisulfonic acid, o-Dianisidine, 3,3'-Dimethylnaphthidine, 3,3'-Dimethylnaphthidine disulfonic acid and combinations thereof.

2. **(Previously Presented)** The method of claim 1 comprising the steps of determining the condition of the functional fluid selected from the group consisting of visually comparing the test medium against a set of comparative visual indicia depicting the functional fluid in at least two different conditions as a guide; using the printed instructions as a guide; and combinations thereof.

3. **(Original)** The method of in claim 1, wherein the test medium comprise paper, cellulosic material polymeric fiber, polypropylene woven fabric, nonwoven fabric, metal, glass, plastic, composite material or combinations thereof.

4. **(Original)** The method of claim 3 wherein the test medium comprises paper, cellulosic material, cellulose nitrate, cellulose acetate wood, chromatography paper, filter paper, polymeric fibers, natural fibers, finely woven fabrics, metal, glass, glass micro fiber, sintered glass, silica coated surfaces, alumina coated surfaces, thin layer chromatography plates, plastic, plastic laminated material, composites or combinations thereof.

5. **(Cancelled)**

6. **(Currently Amended)** The method of claim 1 wherein step (3) further comprises the use of one or more ~~the indicator is selected from the group consisting of~~ acid indicators, base indicators, pH indicators, metal indicators, ~~redox indicators~~, organic indicators, inorganic salts indicators, absorption indicators, dyes and combinations thereof.

7. **(Currently Amended)** The method of claim 6 ~~claim 5~~ wherein the acid/base indicator is selected from the group consisting of malachite green, brilliant green, methyl green, picric acid, cresol red, crystal violet, metanil yellow, cresol red, crystal violet, metanil yellow, mpcresol purple, thymol blue, p-Xylenol blue, thymol blue sodium salt, quinaldine red, tropaeolin OO, 2,6-dinitrophenol, dimethylaminoazobenzene, bromochlorophenol blue, bromophenol blue, bromophenol blue sodium salt, congo red, methyl orange, 2,5-dinitrophenol, 1-naphthyl, bromocresol green, bromocresol green sodium salt, alizarin S, methyl red, methyl red sodium salt, bromophenol red, chlorophenol red, hematoxylin litmus, bromocresol purple, nitrophenol, bromoxylenol blue, alizarin, bromothymol blue, bromothymol blue sodium salt, nitrazine yellow, phenol red, phenol red sodium salt, cresol red, 3-nitrophenol, neutral red, 1-naphtholphthalein, o-cresolphthalein, phenolphthalein, thymolphthalein, alizarin yellow, alkali blue, epsilon blue, indigo carmine, Nile blue, acid fuchsin, fluorescein, eosin, phloxine, rose bengal, rhodamine and combinations thereof.

8. **(Currently Amended)** The method of claim 6 ~~claim 5~~ wherein the metal indicator is selected from the group consisting of Alizarin Complexone, Alizarin S, Arsenazo III, Aurintricarboxylic acid, 2,2'-Bipyridine, Bromopyrogallol Red, Calcon (Eriochrom Blue Black R), Calconcarboxylic acid, Chrome Azurol S, Chromotropic acid, disodium salt, Cuprizone, 5-(4-Dimethylamino-benzylidene)rhodanine, Dimethylglyoxime, 1,5-

Diphenylcarbazide, Dithizone, Eriochrome Black T , Eriochrome Blue SE , Eriochrome Blue Black B, Eriochrome Cyanine R , Fluorescein Complexone, Glyoxalibis(2-hydroxylanil), Hematoxylin, 8-Hydroxyquinoline, 2-Mercaptobenzothiazole, Methylthymol Blue, Murexide, 1-Nitroso-2-naphthol, 2-Nitroso-1-naphthol, Nitroso-R-salt, 1,10-Phenanthroline, Phenylfluorone, Phthalein Purple, 1-(2-Pyridylazo)-naphthol, 4-(2-Pyridylazo)resorcinol, Pyrogallol Red, Sulfonazo III, 5-Sulfosalicylic acid, 4-(2-Thiazolylazo)resorcinol, Thorin, Thymolthalexon, Tiron, Tolurnr-3,4-dithiol, Xylenol Orange, Zincon and combinations thereof.

9. **(Cancelled)**

10. **(Original)** The method of claim 1 comprising a marker substance in the test medium that is compatible with the lubricant and wherein the marker is selected from the group consisting of metals, metal salts, metal oxides, metal coordination complexes, other substances and combinations thereof.

11. **(Original)** The method of claim 1 comprising a developing agent is selected from the group consisting of mineral or organic acids and the like, basic substances, oxidizing agents, reducing agents, chelating agents and combinations thereof.

12. **(Original)** The method of claim 11 wherein the test medium is treated with a developer or detector reagent for the purposes of reacting with a marker substance to cause a color change, chemiluminescence, phosphorescence, fluorescence or combinations thereof.

13. **(Original)** The method of claim 1 wherein the test medium has a solvent.

14. **(Original)** The method of claim 13 wherein the solvent is selected from the group consisting of aliphatic and aromatic hydrocarbons, alcohols, glycols, glycol ethers, lower alcohols, such as methanol, ethanol and propanol, ethers, esters, water and combinations thereof.

Claims 15 – 22 **(Cancelled)**

23. **(Currently Amended)** A method to analyze the condition of a functional fluid comprising:

- (1) obtaining a sample of the functional fluid,
- (2) placing the sample of the functional fluid on a test medium wherein the test medium comprises polymeric fibers,
- (3) reacting the functional fluid with an indicator in the test medium, and
- (4) analyzing visually the results of the reaction,

resulting in the determination of the condition of the functional fluid; wherein the functional fluid is selected from the group consisting of engine oils, transmission fluids, greases, gear oils, hydraulic fluids, farm tractor fluids, transformer fluids, ~~fuels~~, diesel, gasoline, biofuels, and mixtures thereof;

wherein the indicator is selected from the group consisting of Neutral Red, Safranine T or O, Indigo Carmine, Methylene Blue, Thionin, Thymolindophenol, 2,6-Dichlorophenolindophenol, Gallocyanine, Nile Blue, Variamine Blue, Diphenyl amine, Diphenylamine-4-sulfonic acid, barium salt, Tris(2,2dipyridyl)iron(II) sulfate, N-phenylanthranilic acid, Ferroin, Nitroferroin, 5,6-Dimethylferroin, 4-Amino-4'-methyldiphenylamine, Diphenylbenzindinedisulfonic acid, o-Dianisidine, 3,3'-Dimethylnaphthidine, 3,3'-Dimethylnaphthidine disulfonic acid, alizarin and combinations thereof.

24. **(Previously Presented)** The method of claim 23 wherein the indicator is selected from the group consisting of Methylene Blue, alizarin, and combination thereof.